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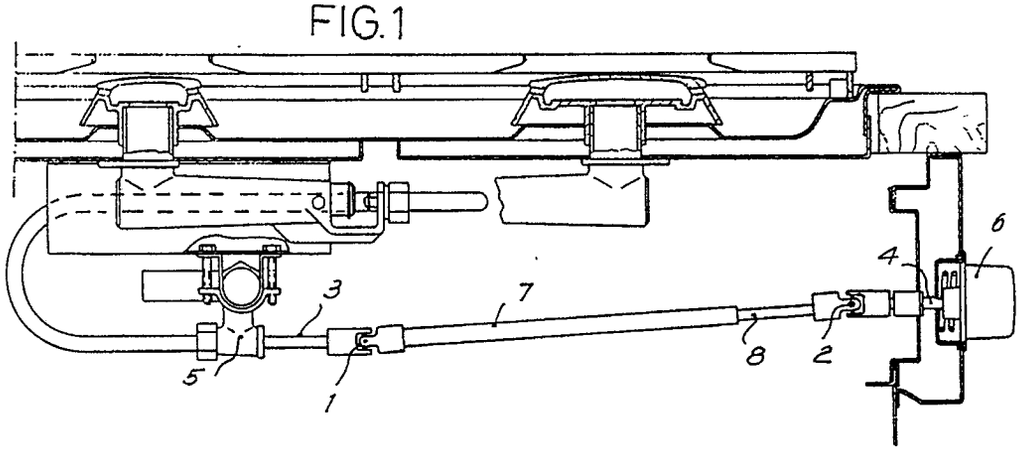
(54) Self-adjusting control mechanism for household apparatus.

(57) SELF-ADJUSTING CONTROL MECHANISM FOR HOUSEHOLD APPARATUS of the kind comprised by an adjustable axis with double articulation (1,2) at each end and anti-turn safety device of the control button (6), the said axis being comprised by two single elements (7,8), with coaxial free sliding coupling and with non-circular coupling in cross-section. The safety device is comprised by a box (10), through which the axis (4) passes bearing the control button (6), which axis has a flange (12), between which and the bottom of the box (10) a return spring (13) is housed, the axis (4) having a projecting radial pivot (15), susceptible to being housed, by biasing the spring (13) in a notch (14) provided for the purpose on the edge of the box (10). The mechanism is especially applied for control of gas operated apparatus.

FIG.1



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The present invention refers to a self-adjusting control mechanism for household apparatus, particularly for gas cookers and the like, with orientable double linkage whereby, with a single embodiment, adaptation is achieved to the most variable measurements and arrangements of the members to be governed, such as cooker cocks, the level of which, because of burner placement requirements, does not always exactly coincide with that of the axis of those cocks, which always means assembly difficulties, to obtain smooth effective transmission of movement.

BACKGROUND OF THE INVENTION

Cocks whose control evinces high quality in linkage, with double articulation, cardan-type or similar, with the object of overcoming the mentioned uneven levels, jointly with the different distances that may exist between the cocks and the burners, are already known and used in these gas apparatus.

However, such embodiments have the drawback that, although involving relatively simple mechanisms, they are excessively mechanically complicated, with parts interconnected by screw thread, through intermediate parts resulting in units with high manufacturing costs and laborious assembly, on their length having to be adjusted to the distance between the engaging points, followed by the difficulty in obtaining smooth movement of said mechanisms because, if perfect adjustment is not achieved, operation of the control is also affected.

Another construction item likewise leading to assembly difficulties where these mechanisms are concerned, is the safety device for the cocks, which forces pressure to be exerted on the button to unlock them, before the cock axis can be turned. These devices, in the usual embodiments, are operated by compression springs arranged behind the button and remaining exposed, being fat and dirt retention points, requiring constant cleaning and attention.

DESCRIPTION OF THE INVENTION

The mechanism object of the invention aims to solve the mentioned drawbacks so that, being of the kind comprising a double articulation at each of its ends, i.e., cardan transmission type, the interconnection between one and the other ends being comprised by just two elements with coaxial longitudinal free sliding coupling, with non-circular coupling in cross-section, in such a way that said coupling is completely self-adjusting, between relatively ample limits or distances, allowing application of the mechanism to a diversity of apparatus, without having to consider the relative positions of the cocks and of the controls.

Furthermore, the safety device is comprised by a box, attached to the front of the control panel of the apparatus, through which the axis of the control button passes, and in whose inside there is housed, completely insulated from the outside, a spring, against which a flange of the axis itself of the control button acts, thereby assuring return of the unit to the position of rest. Setting this position, which is demanded as safety measure in this sort of apparatus, is achieved by means of arrangement on the edge of the opposite mouth of the mentioned box, of a notch into which, in said position, a small pivot will be inserted, joined to the axis itself, thanks to the action of the inner spring.

SHORT DESCRIPTION OF THE DRAWINGS

To heighten understanding of what has thus far been stated, and merely as an example, without any limiting character whatsoever, various drawings accompany the present description, in which a mechanism of the indicated characteristics is represented schematically

In said drawings, figure 1 is a side elevation of the mechanism, applied to a gas cooker, figure 2 corresponds to a detail, partially sectioned and likewise in elevation view of the safety device; figures 3 and 4 show respective longitudinal and transversal cross-section views at the plane III-III, respectively, of the coaxial interconnection of the control; figures 5 and 6 show views in detail, in elevation and on a larger scale, allowing one to see operation of the safety device.

DESCRIPTION OF A PREFERRED EMBODIMENT

Just as can be seen in the mentioned drawings, the mechanism, of the kind provided with a cardan-type double articulation -1-and -2- has the axis -3- and -4-, of actuation of the cock -5- and of press button -6-, repsectively, interconnected through two single elements telescopectly coupled -7-8-, the first of which is hollow and has a square profile axial bore -9-, into which the free sliding rod of corresponding section -8- is inserted, constituting the complementary element. At the respective ends of each one of these elements -7- and -8-, the aforementioned double articulations -1- and -2- are arranged.

Another feature resides in the makeup of the safety device against inadvertent opening, comprised by a box -10-, attached to the front of the control panel -11- of the apparatus, through which

inside passes axially the axis -4- of the control botton -6-. This axis -4- has a flange -12-, between which and the bottom of the box a compression resort -13- is placed, which tends to send the unit back to the position of rest.

The box, on its edge opposite to that of the entry of the axis -4-, bearing the control button -6-, has a notch -14-, into which a pivot -15- fits radially attached to the axis -4-, on being driven by the spring -13- toward the position of rest of the unit, fixing said position, at least as long as sufficient pressure is brought to bear on the button -6-.

As can be seen, the makeup of the mechanism cannot be simpler, and the structure of the axis formed by the two sole elements -7-8-, telescopectly allows one, within some sufficiently ample limits, depending on the length of each one of them, to guarantee covering the distance between the cock -5- and the control button -6-.

The uneven level between both members will also be overcome, in the conventional manner, by the double articulated couplings -1- and -2-.

On its part, the makeup of the safety device and the fact that the active members remain inside the box -14-, prevent them from being damaged through dirt, fat, etc., that may be provoked by use of the apparatus.

It is evident that, although in the embodiment represented as example, being an especially interesting and preferred one, mention is made of the sliding coupling between the coaxial elements -7-8- by means of a square profile, analogous results can be obtained, on condition that the internal profile of the former, and outer profile of the latter, are not circular, to assure drag between one and the other.

The mechanism in question can be applied to any apparatus whatsoever, in which it might be necessary to establish an interconnection between variable distances whereby, besides simplifying construction of the mechanism in itself, assembly of the unit is rendered much easier, on procuring self-ajdustment of the sliding coupling, without having to resort to constructing mechanisms of different lengths or with complicated adjusting mechanisms, not always easy to manage in a reduced space, as generally occurring in apparatus of this kind.

Claims

1. Self-adjusting control mechanism for household apparatus, particularly for cookers and other gas apparatus, of the type comprising an axis provided with a double articulation (1,2) at its ends and an anti-turning safety device operated by the control button (6) of the apparatus, characterised by the fact that the interconnecting axis between the axis (4) of the control button (6) and that (3) of the corresponding cock is formed by two single elements (7-8) coupled to one another coaxially, sliding freely, and with non-circular coupling cross-section.

2. Mechanism, in accordance with the preceding claim, characterised by the fact that the safety device for avoiding inadvertent turning of the control button (6) is comprised by a box (10) adjacent to the control panel (11) of the apparatus, through whose inside passes the axis (4) bearing the button (6), whose axis has a flange (12), between which and the bottom of the box (10) a compression spring is housed which biases the unit toward the position of rest, which is set by a pivot (15) radially attached to the axis (4), susceptible to being housed in a notch (14), provided for this purpose on the edge of the box (10).

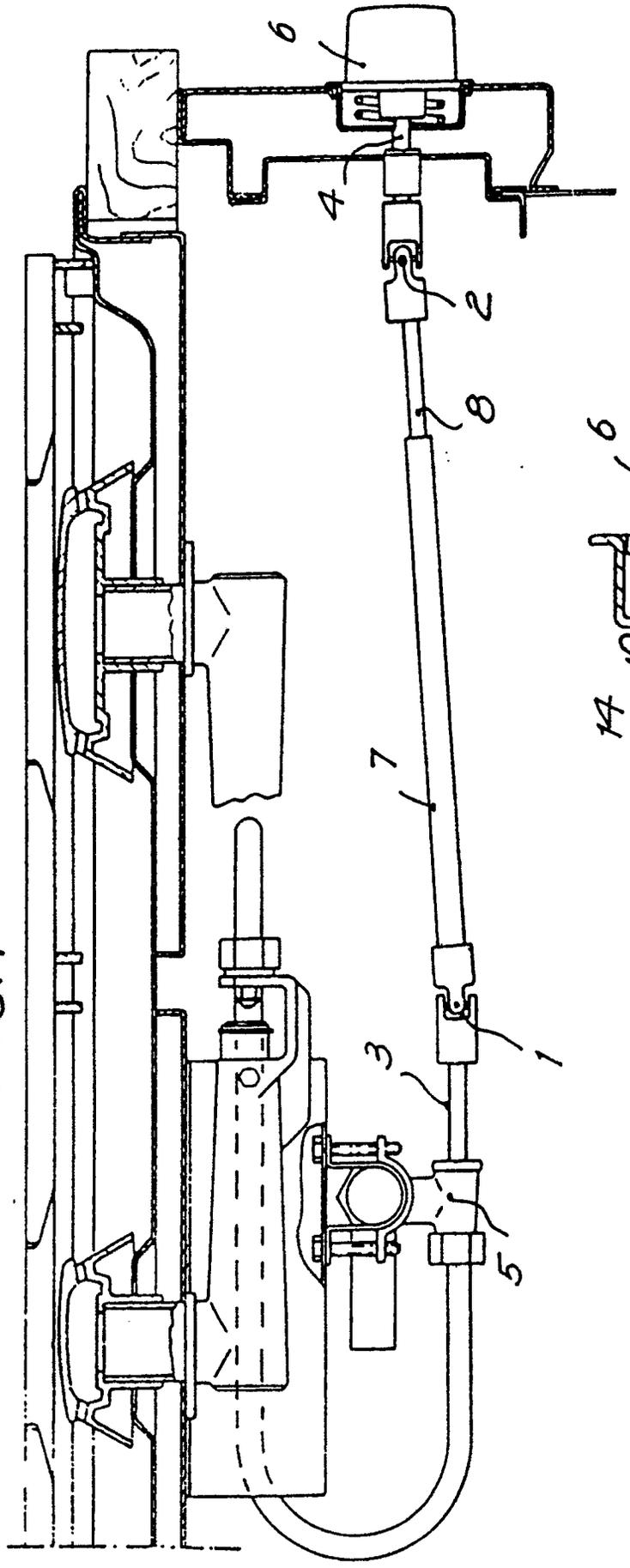

FIG.1

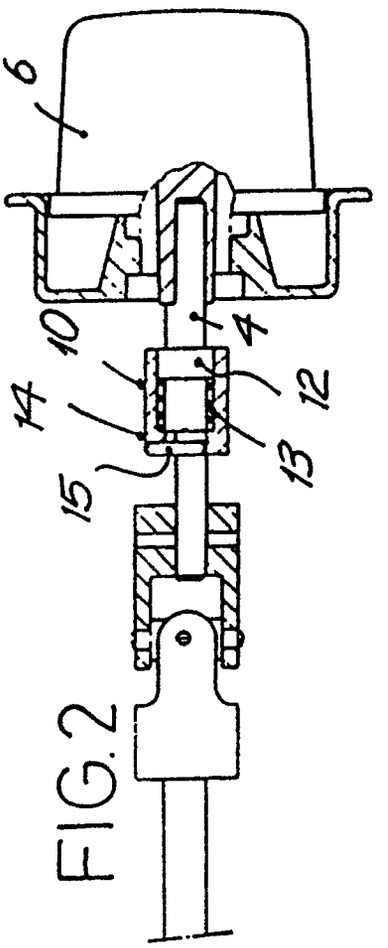

FIG.2

FIG. 3

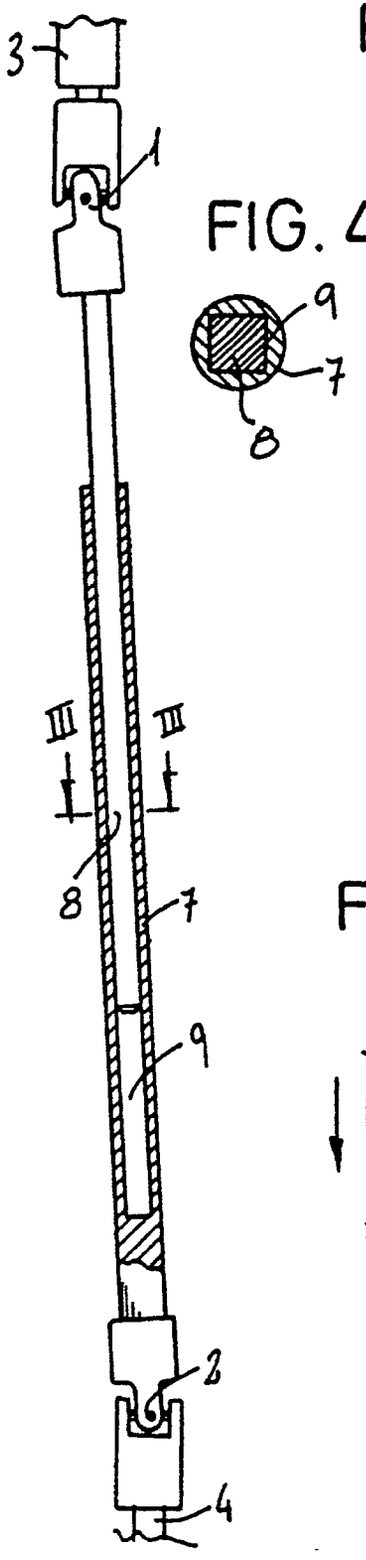

FIG. 4

FIG. 5

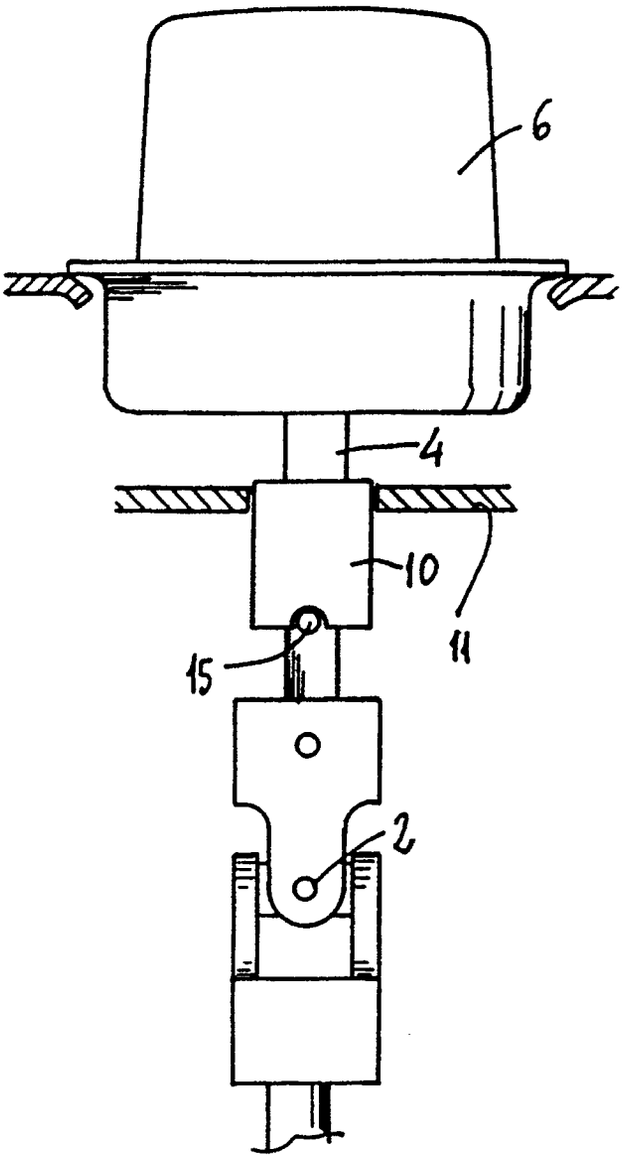

FIG. 6